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In re Application of: John DeMayo and Robert Aguilar

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For: **Apparatus and Method for Hyperlinking Specific Words in
Content to Turn the Words into Advertisements**

Commissioner for Patents
Box Patent Application
Washington, D.C. 20231

Dear Sir:

Enclosed please find the following:

1. Specification, abstract and claims (6 independent, 24 dependent, 30 total)(18 pages);
2. Informal drawings (9 figures, 8 sheets);
3. One check in the amount of \$565.00 (\$355.00 filing fee, \$120.00 excess independent claims, \$90.00 excess claims); and,
4. Certificate of Express mailing.

The applicant is a small entity according to 37CFR \$1.27(c), and is thus entitled to pay reduced fees. The Commissioner is hereby authorized to charge any fee deficiency, or credit any overpayment, to Deposit Account No. 18-1579. The Commissioner is also authorized to charge Deposit Account No. 18-1579 for any future fees connected in any way to this application. Two copies of this letter are enclosed.

Respectfully submitted,



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TITLE: Apparatus and Method for Hyperlinking Specific Words in Content to
Turn the Words into Advertisements

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1 FIELD OF THE INVENTION

2 The present invention relates generally to advertising on a network. More specifically, the
3 present invention is a system and method for enabling a party with content or dialogue text or
4 HTML to hyperlink certain words or phrases to advertisers, in exchange for compensation for
5 this advertising service, in real-time, as published, or on a periodically refreshed basis.

6
7 BACKGROUND INFORMATION

8 The hyperlink or hypertext link is what makes the World Wide Web a web. A hypertext,
9 "link" is a selectable connection from one word, picture, or information object to another. The
10 most common form of link is the highlighted word or picture that can be selected by the user
11 (with a mouse or in some other fashion), resulting in the immediate delivery and view of another
12 file. The highlighted object is referred to as an anchor. The anchor reference and the object
13 referred to constitute a hyperlink or hypertext link.

14 For online advertising, the anchor reference is typically a picture that forms what is called
15 a "banner ad." Content is typically displayed centrally on a web page and ads are displayed
16 peripherally, such as at the top, bottom or side of a web page. As such, ads and content are
17 physically separate. The online advertising industry is finding that, in many cases, it is very
18 effective to integrate advertising closely with content, typically matching the banner ad fields
19 with the content topic, such as advertising bicycles on a web page with content relating to

1 bicycling.

2 However, present online advertising is suffering from various drawbacks. Many
3 consumers are using free, ad-supported Internet services that display a persistent banner ad
4 window in a location of the service provider's choice, often obscuring, and therefore defeating,
5 the advertising being delivered by the web site being viewed. Other consumers, who are annoyed
6 by banner ads, are increasingly using browsers that incorporate banner-filtering software to
7 prevent ad displays. Additionally, as more consumers access the World Wide Web using devices
8 with smaller displays, such as laptop computers, Internet appliances, palm-size computers, and
9 wireless phones, the graphical links of banner ads are becoming more problematic due to spatial
10 constraints. The advertising spaces are often eliminated by special formatting, such as by palm-
11 formatted pages and WAP-formatted pages.

12 What would be truly useful in a method for integrating advertising with the content being
13 displayed to avoid conflicts between the ads and the available display area.

15 BRIEF SUMMARY OF THE INVENTION

16 The present invention is a system and method for integrating advertising with content
17 more completely by hyperlinking certain keywords or phrases to another Web site (the
18 "subsequent Web site"). The subsequent Web site is then charged for this service. For example,
19 in an article discussing audio speakers, the word "subwoofer" in the middle of an article could be
20 hyperlinked to a Web site that sells subwoofers, or provides more information about them. This
21 hyperlink is sold to the Web site to which it is linked. In another embodiment, text displayed in
22 any software application (not just browsers) is hyperlinked in the same manner.

23 To do this, the present invention comprises a system whereby words within content or

1 dialogue are altered such that they are hyperlinked to an advertiser Web site. The advertiser
2 Web site is charged for the service of being linked to in some way.

3 It is therefore an object of the present invention to avoid the limitations of online banner
4 advertising occupying too much display space by fully integrating advertising links with content.

5 It is another object of the present invention to allow advertising to be delivered to any
6 browser or other software application that supports HTTP, regardless of display size.

7 It is a further object of the present invention to provide a system and method for inserting
8 hyperlinks to advertiser sites into the content of web pages.

9 It is a further object of the present invention to provide a system and method for inserting
10 hyperlinks to advertiser sites into the text of any software application that supports HTTP.

11 It is yet another object of the present invention to provide a business model to
12 compensate content providers providing anchor references for hyperlink ads and collect fees
13 from the linked web pages containing the referred object of hyperlink ads.

14 These and other objectives of the present invention will become apparent to those skilled
15 in the art from a review of the specification herein.

17 BRIEF DESCRIPTION OF THE DRAWINGS

18 **Figure 1** illustrates a typical schematic for practicing one embodiment of the present
19 invention.

20 **Figure 2** illustrates a typical business model used by one embodiment of the present
21 invention.

22 **Figure 3** illustrates a first embodiment of a process to practice the present invention.
23 When the ad server downloads HTML files from the content provider.

Figure 4 illustrates another embodiment of a process to practice the present invention.

Where the ad server provides a script to the content provider

Figure 5 and **figure 5A** illustrate yet another embodiment of a process to practice the present invention when the content provider places code in HTML documents.

Figure 6 illustrates an alternative embodiment of a process where web pages are served by the ad server to practice the present invention.

Figures 7A-B illustrate alternative embodiments of a process of the present invention where web pages are hyperlinked by software run on a user computer.

DETAILED DESCRIPTION OF THE INVENTION

The present invention in a method for taking content in text, HTML, or related format from Web pages (for browsers) or other sources (for other software applications that support HTTP) and searching it for words or phrases that advertisers have contracted to have hyperlinked to their Web pages. These words and phrases are then hyperlinked in HTML format to the advertiser's Web site, in a preferred embodiment involving routing through a tracking URL to track the number of times the hyperlink is clicked on. The content is then published on the Internet (for browsers) or displayed within an application (for other software applications that support HTTP) and readers seeing the content have the option of clicking on the hyperlink and visiting the contracted advertiser's Web site, as well as potentially holding their mouse or other pointing device over the hyperlink to see what site it leads to. The advertiser is then charged on a variety of different models including flat rate, flat rate by site, a rate for every time the hyperlinked word is viewed or called (an impression), every time the hyperlink is clicked on (clicks), or every time the hyperlink is clicked on and a sale, registration, or other action results

(conversions). The content producer, distributor, or even the end viewer of the content, is potentially compensated on any of the same metrics as well.

Although “content,” as used in reference to the Internet generally includes text, images, sounds, and software code transmitted to users, as used herein, the term “content” is more narrowly defined and refers to textually-based information, education, and entertainment materials (produced by organizations and individuals) that has been authored independent of any advertiser. The textual labels of images, including the ALT=“image label” of IMG tags, are also considered to be included in the definition of content, as used herein.

The term “HTML,” as used herein refers to any hypertext-capable markup language, including, but not limited to, DHTML, XHTML, SGML, XML, HDML, and WML.

Additionally, although the invention will now be described with respect to content from Web pages being hyperlinked and viewed in a browser, the invention is equally and similarly capable of being practiced with text from other sources being hyperlinked and viewed in any software application that supports HTTP. For example, an HTTP-enabled word processing application could have a macro or other code that performs hyperlinking on appropriate words in any document opened by the application.

As illustrated in **fig. 1**, an end user browser **110** accesses Web page A over the Internet **100**. The content of the page, in text, HTML, or related format, has earlier been input **150** into the system of the present invention and searched for words or phrases that advertisers have contracted to have hyperlinked to them. These words and phrases are then hyperlinked in HTML format to the advertisers Web page B **120** by routing through a tracking URL to track **180** the number of times the hyperlink is clicked on. The ad server **130** then looks up and supplies the destination URL from a Destination URL database **170** needed to hyperlink the browser to the

1 correct advertiser Web page B **120**. To accomplish this, the content published on page A
2 includes the HTML with the desired words hyperlinked to a tracking URL. The end users
3 browsing the content then has the option of clicking on the hyperlink and visiting the contracted
4 advertisers Web site, as well as potentially holding their mouse over the hyperlink to see what
5 site it leads to.

6 This hyperlinking of text is particularly useful for wireless devices that do not have
7 displays appropriate for typical advertising media, but which do support hyperlinking. As shown
8 in **fig. 1**, an optional WAP gateway and WML server **185** can therefore be used to allow the
9 invention to be practiced on wireless devices

10 The advertiser is charged on a variety of different models including flat rate, flat rate by
11 site, a rate for every time the hyperlinked word is viewed or called (an impression), every time
12 the hyperlink is clicked on, or every time the hyperlink is clicked on and a sale, registration, or
13 other action results although these methods are not meant as limitations in charging methods.
14 The content producer, distributor, or even the end viewer of the content, could be compensated
15 on any of the same metrics as well.

16 The ad server records tracking information concerning which hyperlink ads have been
17 served to which pages for each ad served and includes the desired metric data such as date-time,
18 actions (impressions, click-throughs, sales, etc.), media, page-position, person id, etc. required
19 for any fee collection from advertisers or any revenue disbursement to Web pages displaying the
20 hyperlink ads. To aid in tracking unique actions, an optional cookie server can be employed as a
21 proxy for those browsers that do not support cookies or have them turned off.

22 As mentioned above and illustrated in **fig. 2**, the tracking data **230** is then used by the ad
23 server **200** to collect fees from advertisers **210** and distribute revenue to Web pages **220** on

1 which the ads have been served (or other compensated party, such as, but not limited to, users or
2 content providers).

3 The invention can be practiced in a variety of ways. In a first embodiment, illustrated in
4 **fig. 3**, the ad server downloads HTML files from the content provider **300**. The ad server then
5 alters the HTML to include hyperlinked words in the content **310**. The ad server then uploads the
6 altered HTML files over the existing HTML files on the content providers server **320**.

7 In a second embodiment, illustrated in **fig. 4**, the ad server provides a script to the content
8 provider **400**. The content provider then runs the script on their servers **410**, and the script
9 overwrites existing HTML files on the server with hyperlinked HTML files **420**.

10 **Fig. 5** illustrates another possible embodiment of the present invention. In this
11 embodiment, the content provider places DHTML coding in their HTML documents **500**. This
12 DHTML coding then references the ad server in order to know which words to hyperlink **510**.
13 The DHTML coding then automatically hyperlinks the given words as a user's browser
14 interprets the HTML **520**.

15 Although described above with DHTML code, the present invention can also be practiced
16 with a variety of other such coding, including, but not limited to, java, javascript, DHTML, or
17 combinations thereof. The specific code is not a limitation, so long as it, by whatever means, will
18 call the server and hyperlink certain words.

19 For example, in a typical embodiment of this version, the publisher ads a small tag to the
20 bottom of each page on his web site, and we can then add the necessary hyper links to his page.
21 The tag that the publisher would add to the bottom for the page would look something like this:

22
23 `<SCRIPT LANGUAGE="JavaScript1.1"`
24 `src="http://ourserver.com/AdHyper.js?accountname"></SCRIPT>`
25

1 This simply calls “ourserver” to find out which words to hyperlink where, and also passes
2 through the publishers account name so we can keep track of how many impressions and clicks
3 each publisher delivers.

4 The .js on “ourserver” would typically look something like this:

```
5 HyperLinker2000();  
6  
7 function HyperLinker2000() {  
8     var txtRange = document.body.createTextRange()  
9     var keyvalues = new Array(' strike ', ' investigation ', ' the ', ' men  
10 ');  
11     var keylinks = new Array('<a href =http://www.espn.com> strike </a> ' ,  
12 '<a href =http://www.NBA.com> investigation</a> ' , '<a href  
13 =http://www.washingtonpost.com the</a> ' , '<a href  
14 =http://www.washingtonpost.com> men</a> ');  
15     for ( var i = 0; i <= 500; i++) {  
16         var x = i;  
17         while(txtRange.findText(keyvalues[x])) {  
18             txtRange.pasteHTML(keylinks[x]);  
19         }  
20         var txtRange = document.body.createTextRange()  
21     }  
22 }  
23
```

24 The example above is displayed in **figure 5A** and is set to hyperlink the words "strike",
25 "investigation", "the", and "men" to the corresponding URL. Notice the space before each word.
26 This prevents from hyperlinking the piece of the word "men" from "Supermen", and only links
27 the word men when it is preceded by a space.

28 **Fig. 6** illustrates an alternative embodiment wherein the web pages are served by the ad
29 server. In this system the content provider redirects users to the ad server’s web page **600**. The ad
30 server page delivers content with altered HTML that includes the hyperlinks **610**. The ad server
31 does this using frames or coding in order to display the content providers URL in the browser
32 display **620**. This function provides transparency to the user.

33 **Figs. 7A-B** illustrate embodiments wherein the computer of the end viewer of the content
34 (i.e., user) runs software that provides the text hyperlinks in the viewed content. This can be
35 done in a variety of ways.

1 One way to accomplish this is to have the user's browser download a piece of software
2 that interacts with the browser to either change the HTML to create the hyperlink or create a
3 "layer" over the HTML that enables the ad server to hyperlink certain words, as illustrated in **fig.**
4 **7A**. In this embodiment, the user is essentially accessing sites **710** through an ad server-supplied
5 script **720**, which performs the transformation when run on the computer of user **730**. The
6 viewed site **710** may or may not have knowledge of this. The action could be initiated by the
7 user **730** (where the user chooses to come through the ad server, as shown by first arrow **740** to
8 view pages or the ad server **750** provides some form of incentive) or initiated by the web site **710**
9 (where the web site **710** chooses to route the user **730** through the ad server **750**, as shown by
10 second arrow **760**).

11 In either situation, the user **730** is directed to a script **720** on the ad server **750** that
12 analyzes and parses the requested page and changes the pages contents so they are displayed
13 differently to the user **730** (the changes being hyperlinking certain words). A similar technology,
14 used for entertainment, can be found at <http://www.psyclops.com/translator/>. Java, JavaScript,
15 and Java applets could be used to perform either the method whereby the HTML is replaced as it
16 is "read" by the end user with new HTML which contains the hyperlinks, or such that DHTML
17 or language which uses a similar technology is inserted using Java, JavaScript, or a Java applet to
18 create a "layer" that lays over the existing html and causes certain words to be hyperlinked.

19 Another way to have software perform the hyperlinking at the user's computer is to
20 integrate the appropriate code that performs the hyperlinking of a page **770** into the browser
21 software **772** displaying the text, as illustrated in **fig. 7B**, to present an ad-hyperlinked page **774**.
22 In the illustration, "computer", "subwoofer", and "music" have been hyperlinked to advertiser-
23 selected sites. To accomplish this type of hyperlinking, the ad server could partner with ICQ or

1 Netscape and build into their software applications a component that performs the text
2 hyperlinking. This could also be done by browser plug-ins.

3 Although all of the embodiments above have discussed hyperlinking to advertiser-
4 selected sites, it is also possible that many advertisers will want to link to the same words. So,
5 instead of linking directly to an advertisers web site, the ad server could instead link the word or
6 phrase to a list of advertisers related to (or who have selected) the word or phrase in a new
7 HTML page or new document, or via a DHTML layer containing this list (the DHTML version
8 could be by click, or by simply moving a selector (i.e., a “mouseover”) showing the list when the
9 user holds their mouse or pointing device over the hyperlink). This new list could open as a new
10 HTML page in the original browser window, or in a new browser window, typically somewhat
11 similar then the original. This list could take the format of what are typically described as search
12 engine listings, the advertisers typically being charged for appearing in these listings, either
13 CPM, CPC, or CPA or combination thereof, and possibly ranked in order of payment (so the
14 advertiser paying the most would get listed highest on the list).

15 The ad serving system typically can include load balancers, such as Cisco/Arrowpoint
16 CS 800’s performing layer 7 polling with HTTP “get” calls every 1-3 seconds, to evenly
17 distribute the requests to the ad servers. The ad servers will typically consist of 32-36 Pentium III
18 processors running at 600-800 MHz, each having 1-2 GB of RAM and 36GB hard drives. Server
19 software can be C++ compiled and running on FreeBSD, being held together with Chron, Perl,
20 and Perlscripts, and could also be ported to Linux, A/UX, Windows NT, and Sun Solaris.

21 Typical cookie server hardware can include multi-processor systems with raid arrays and
22 4GB of RAM, running on Linux or FreeBSD and communicating with the ad server via TCP.

23 The database hardware can typically include a pair of Sun 4500 processors and an EMC

- 1 raid array with MySQL database management software. Destination URLs can be served from
- 2 the destination (ad) database via NFS mount to the ad server.
- 3

1 We claim:

- 2
- 3 1. An apparatus for hyperlinking specific words in content to turn the words into
- 4 advertisements, comprising:
- 5 an Internet-enabled web browsing device connected to the Internet;
- 6 a content provider server having content files to be displayed on web browsers,
- 7 said content provider server being connected to the Internet;
- 8 an advertiser web page accessible over the Internet; and
- 9 an ad server connected to the Internet,
- 10 wherein the ad server provides means for providing a hypertext anchor to an advertiser-
- 11 chosen word or phrase in a content file to link said advertiser-chosen word or phrase to
- 12 said advertiser web page.
- 13 2. The apparatus of claim 1, wherein said means for providing a hypertext anchor to an
- 14 advertiser-chosen word or phrase in said content file is an altered version of said
- 15 content file uploaded over said content file on said content provider server, said
- 16 altered version being identical to said content file with the exception of HTML
- 17 coding to provide said hypertext anchor.
- 18 3. The apparatus of claim 1, wherein said means for providing a hypertext anchor to an
- 19 advertiser-chosen word or phrase in said content file is a script to be run on said
- 20 content provider server to overwrite the existing HTML of said content file with
- 21 altered HTML including coding to provide said hypertext anchor.
- 22 4. The apparatus of claim 1, wherein said means for providing a hypertext anchor to an
- 23 advertiser-chosen word or phrase in said content file is a means associated with said

ad server to determine which words to hyperlink when referenced by coding in said content file.

5. The apparatus of claim 4, wherein said means associated with said ad server to determine which words to hyperlink when referenced by coding in said content file comprises:

decisioning logic; and

a database associating an advertiser-chosen word or phrase with a destination URL pointing to said advertiser web page.

6. The apparatus of claim 1, wherein said means for providing a hypertext anchor to an advertiser-chosen word or phrase in said content file is an altered version of said content file stored on said ad server and served by said ad server in response to content provider server redirection of requests, said altered version including HTML coding to provide said hypertext anchor.

7. The apparatus of claim 6, wherein said altered version further includes coding to display a content provider URL in a browser window of said Internet-enabled web browsing device.

8. The apparatus of claim 1, further comprising means to link to said advertiser web page using a tracking URL.

9. A method for hyperlinking specific words in content to turn the words into advertisements, comprising:

connecting a content provider server to the Internet, said content provider server having content files to be displayed on web browsers;

providing an advertiser web page so as to be accessible over the Internet; and

1 connecting an ad server to the Internet,
2 wherein the ad server provides a hypertext anchor to an advertiser-chosen word or phrase
3 in a content file to link an Internet-enabled web browsing device connected to the Internet
4 to said advertiser web page.

5 10. The method of claim 9, wherein the ad server provides a hypertext anchor to an
6 advertiser-chosen word or phrase in said content file by:

7 searching said content file for an advertiser-chosen word or phrase;
8 altering the HTML of said content file with HTML coding to provide said
9 hypertext anchor to produce an altered version; and
10 uploading the altered version over said content file on said content provider
11 server.

12 11. The method of claim 9, wherein the ad server provides a hypertext anchor to an
13 advertiser-chosen word or phrase in said content file by supplying a script to be run
14 on said content provider server to overwrite the existing HTML of said content file
15 with altered HTML including coding to provide said hypertext anchor.

16 12. The method of claim 9, wherein said content file includes coding and the ad server
17 provides a hypertext anchor to an advertiser-chosen word or phrase in said content
18 file by determining which words to hyperlink when referenced by said coding in said
19 content file.

20 13. The method of claim 9, wherein the ad server provides a hypertext anchor to an
21 advertiser-chosen word or phrase in said content file by:

22 downloading said content file;

23 creating an altered version of said content file including HTML coding to

1 provide said hypertext anchor; and
2 storing said altered version on said ad server;
3 wherein said content provider server redirects requests for said content file to said
4 ad server; and
5 said ad server serves said altered version.

6 14. The method of claim 13, wherein said ad server employs frames so as to display a
7 content provider URL in a browser window of said Internet-enabled web browsing
8 device.

9 15. The method of claim 13, wherein said ad server employs coding to display a content
10 provider URL in a browser window of said Internet-enabled web browsing device.

11 16. The method of claim 9, further comprising linking to said advertiser web page using a
12 tracking URL.

13 17. A method for advertising by hyperlinking specific words in content to turn the words
14 into advertisements, comprising:

15 altering the HTML of content of an Internet-displayed file to include a hypertext
16 anchor on an advertiser-chosen word or phrase to link to an advertiser web page; and
17 receiving compensation from said advertiser.

18 18. The method of claim 17, further comprising compensating at least one of a provider
19 of said content of said Internet-displayed file and an entity that selects said hypertext
20 anchor.

21 19. The method of claim 18, further comprising compensating on a basis selected from
22 the group consisting of flat rate per ad, flat rate per site, impressions, clicks, and
23 conversions.

1 20. The method of claim 17, further comprising linking to said advertiser web page using
2 a tracking URL.

3 21. An apparatus for hyperlinking specific words displayed in an application to turn the
4 words into advertisements, comprising:

5 an Internet-enabled device connected to the Internet;

6 an HTTP-enabled software application operating on said device;

7 a source for text-containing files to be viewed in said software application;

8 an advertiser file accessible over the Internet; and

9 an ad server connected to the Internet,

10 wherein the ad server provides means for providing a hypertext anchor to an advertiser-
11 chosen word or phrase in said text-containing file to link said advertiser-chosen word or
12 phrase to said advertiser file.

13 22. The apparatus of claim 21, wherein said means for providing a hypertext anchor to an
14 advertiser-chosen word or phrase in said text-containing file is a script to be run on
15 said device to provide said hypertext anchor.

16 23. The apparatus of claim 21, further comprising means to link to said advertiser file
17 using a tracking URL.

18 24. A method for hyperlinking specific words in text-containing files to turn the words
19 into advertisements, comprising:

20 providing an Internet-enabled device with an HTTP-enabled software application;

21 providing said text-containing file to be viewed by said software application;

22 providing an advertiser file so as to be accessible over the Internet; and

23 connecting an ad server to the Internet,

1 wherein the ad server provides a hypertext anchor to an advertiser-chosen word or
2 phrase in said text-containing file to link said Internet-enabled device to said advertiser
3 file.

4 25. The method of claim 24, wherein the ad server provides a hypertext anchor to an
5 advertiser-chosen word or phrase in said content file by supplying a script to be run
6 on said device to provide said hypertext anchor.

7 26. The method of claim 24, further comprising linking to said advertiser file using a
8 tracking URL.

9 27. A method for advertising by hyperlinking specific words in documents to turn the
10 words into advertisements, comprising:

11 viewing a document with a software application;

12 altering the document file with software to include a hypertext anchor on an
13 advertiser-chosen word or phrase to link to an advertiser document; and

14 receiving compensation from said advertiser.

15 28. The method of claim 27, further comprising compensating an entity that selects said
16 hypertext anchor.

17 29. The method of claim 28, further comprising compensating on a basis selected from
18 the group consisting of flat rate per ad, flat rate per software application, impressions,
19 clicks, and conversions.

20 30. The method of claim 27, further comprising linking to said advertiser document using
21 a tracking URL.

ABSTRACT OF THE DISCLOSURE

The present invention is a method for taking content in text, HTML, or related format from Web pages or documents and searching it for words or phrases that advertisers have contracted to have hyperlinked to their Web pages or documents. These words and phrases are then hyperlinked in HTML format to the advertiser's Web site, in a preferred embodiment involving routing through a tracking URL to track the number of times the hyperlink is clicked on. In a browser-based embodiment, the content is then published on the Internet and readers seeing the content have the option of clicking on the hyperlink and visiting the contracted advertiser's Web site. The hyperlinking of words can be implemented by (i) an ad server overwriting existing content HTML files, (ii) a script overwriting existing files, (iii) coding in existing HTML files referencing the ad server to determine hyperlinked words, or (iv) redirecting users to an ad server page with appropriately altered HTML files.

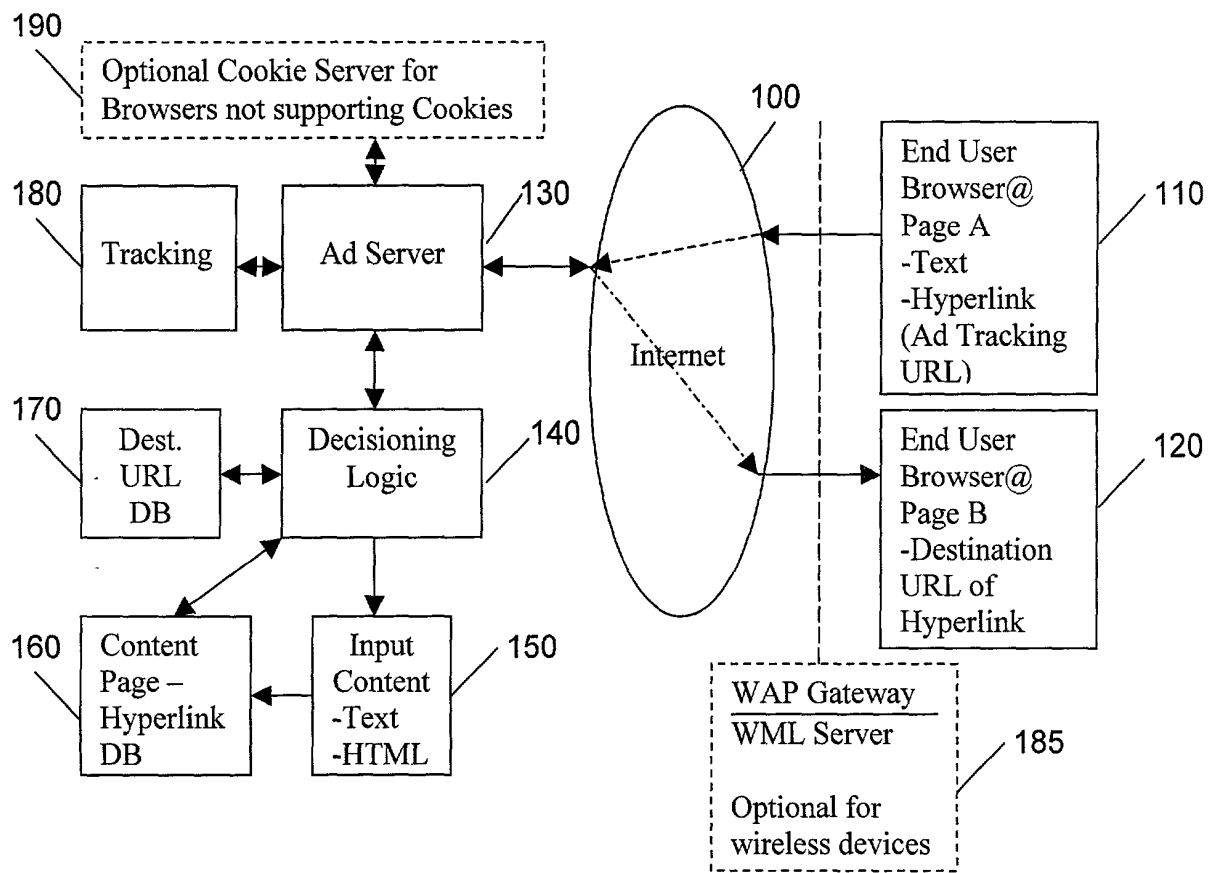


Fig. 1

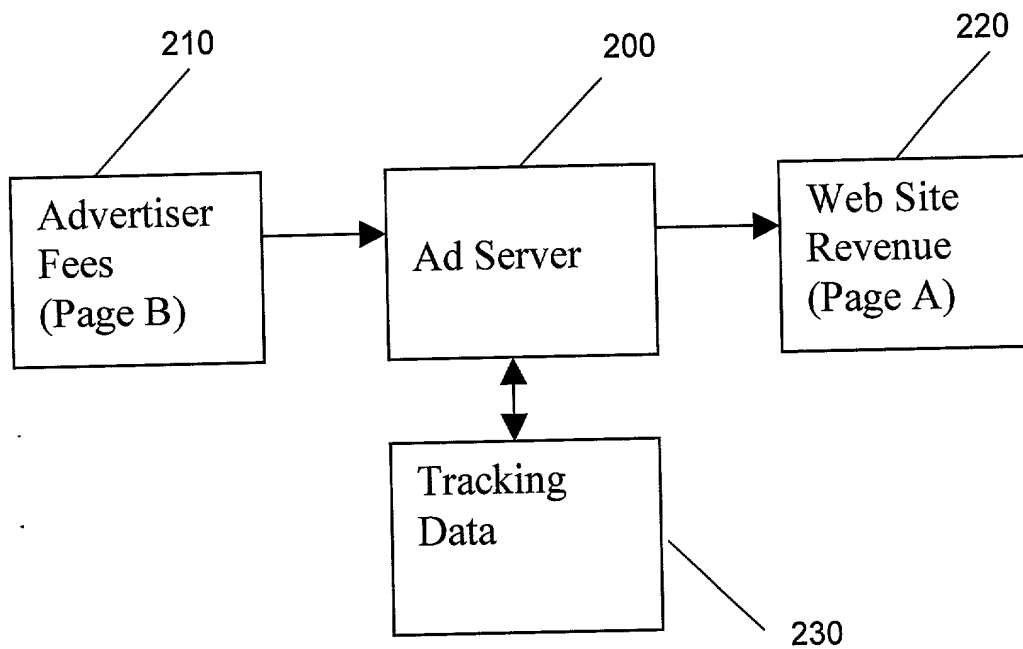


Fig. 2

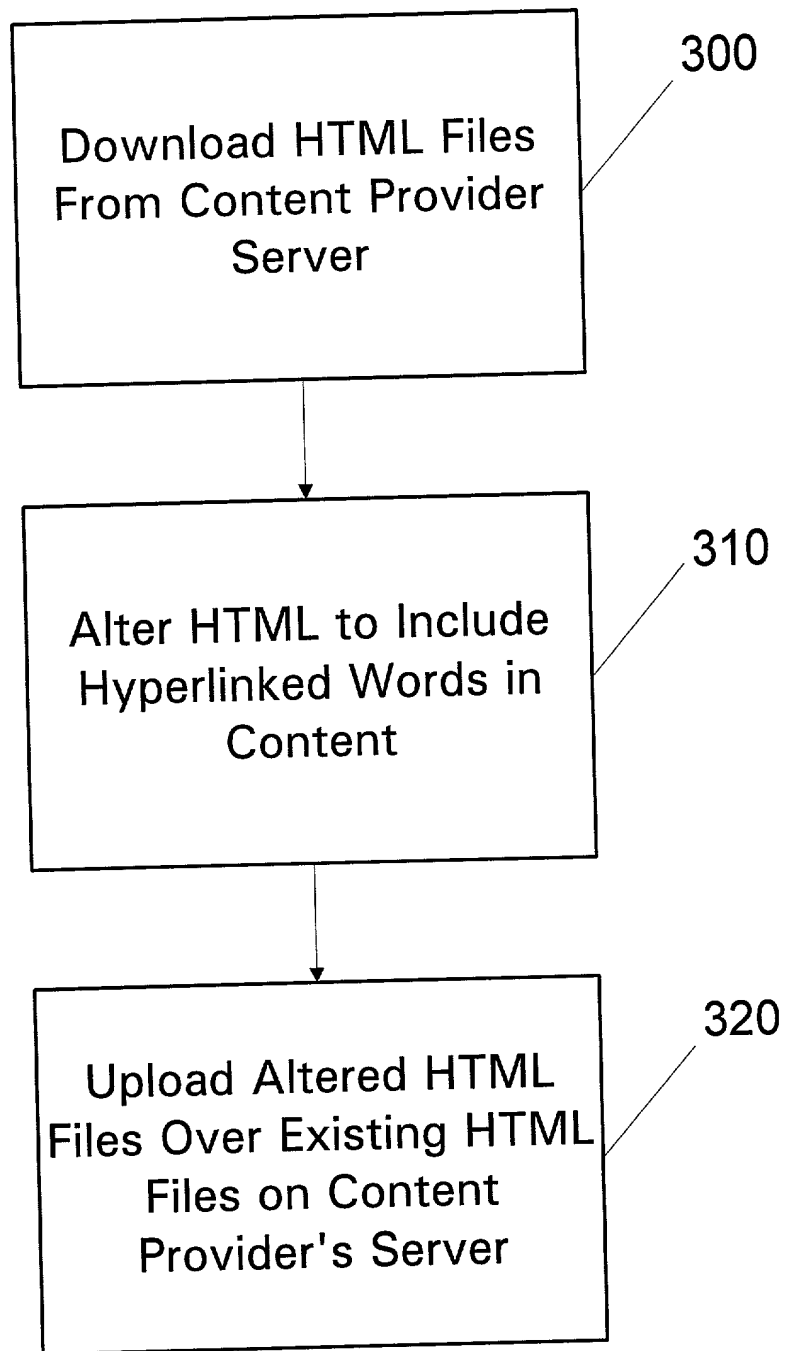


Fig. 3

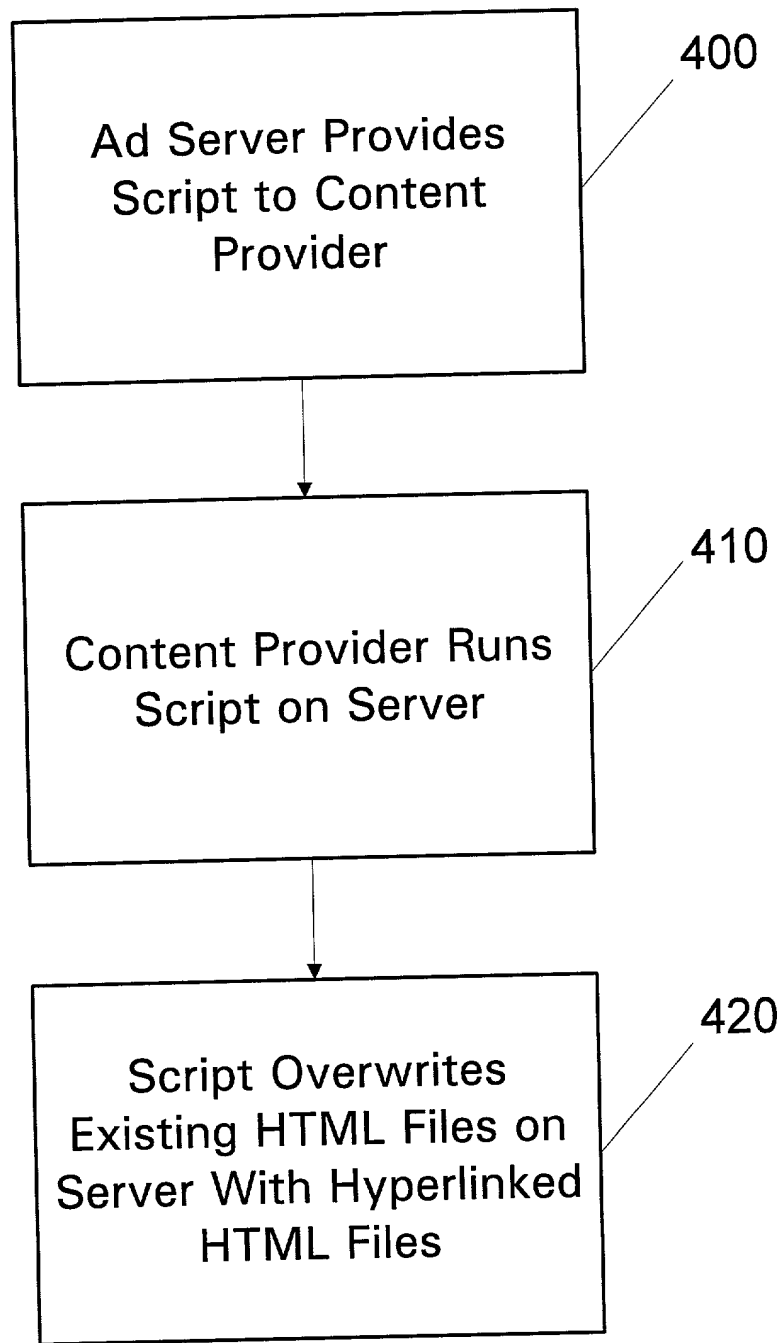


Fig. 4

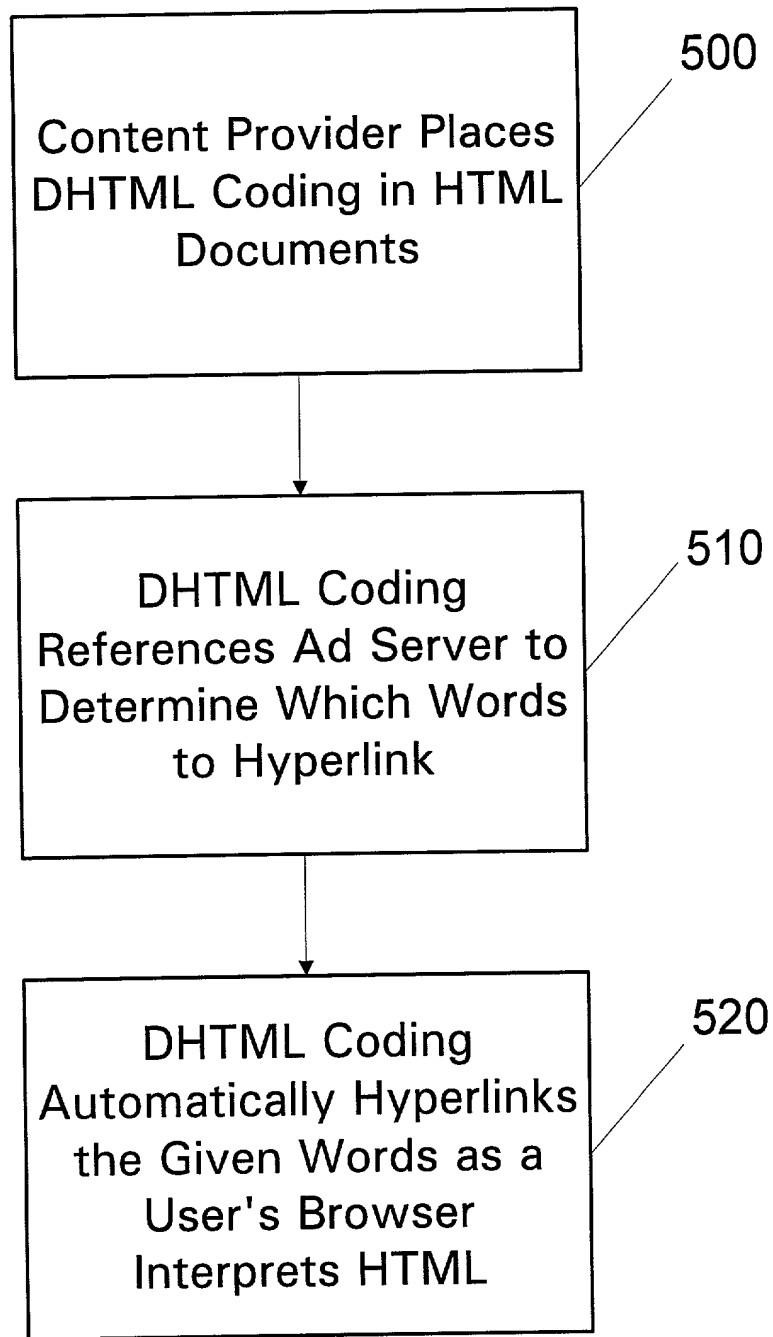


Fig. 5

Hyperlinked document

All four live in the southern port city of Aden, where the two suspected suicide bombers blew up a small boat filled with explosives alongside the Cole as it was refueling on Oct. 12.

The investigation also has revealed that officials in Lahaj, a stronghold of the militant Islamic Jihad, provided the suspected bombers with government cars for use in Aden and between Aden and Lahaj, 22 miles to the north.

The sources said the suspected bombers knew the officials from their time together fighting the Soviets in Afghanistan in the 1980s.

The officials are believed to belong to a group of Islamic militants formed by veterans of the Afghan war. They are believed to have met several times with the suspected bombers since March, when preparations for the bombing are thought to have started.

According to the sources, the two men took their boat for a test ride in the harbor where the Cole was to dock one month before the bombing. One of the fishermen who helped them take the boat into the water is believed to have been an accomplice, the sources said.

U.S. authorities are pressing Yemeni investigators leading the probe to allow U.S. agents a greater role in the investigation.

A Yemeni official, speaking on condition of anonymity, said that expanding the U.S. role in the investigation is being discussed, but that his country's stand remains that the FBI cannot interrogate Yemeni citizens.

There has been no claim of responsibility considered credible in the strike on the Cole. American officials have said Osama bin Laden--America's No. 1 terror suspect, who has pledged to drive the U.S. military out of the Middle East--is a focus of the investigation. The Saudi millionaire, who is living in Afghanistan, is accused of masterminding the 1998 bombings of U.S. embassies in Kenya and Tanzania.

The Cole is being brought home from Yemen aboard a giant Norwegian transport ship on a long route that avoids the Suez Canal. The Cole was expected to arrive in its home port of Norfolk, by about Dec. 10, said Frederik Steenbuch, manager of Oslo-based Offshore Heavy Transport.

FIG. 5A

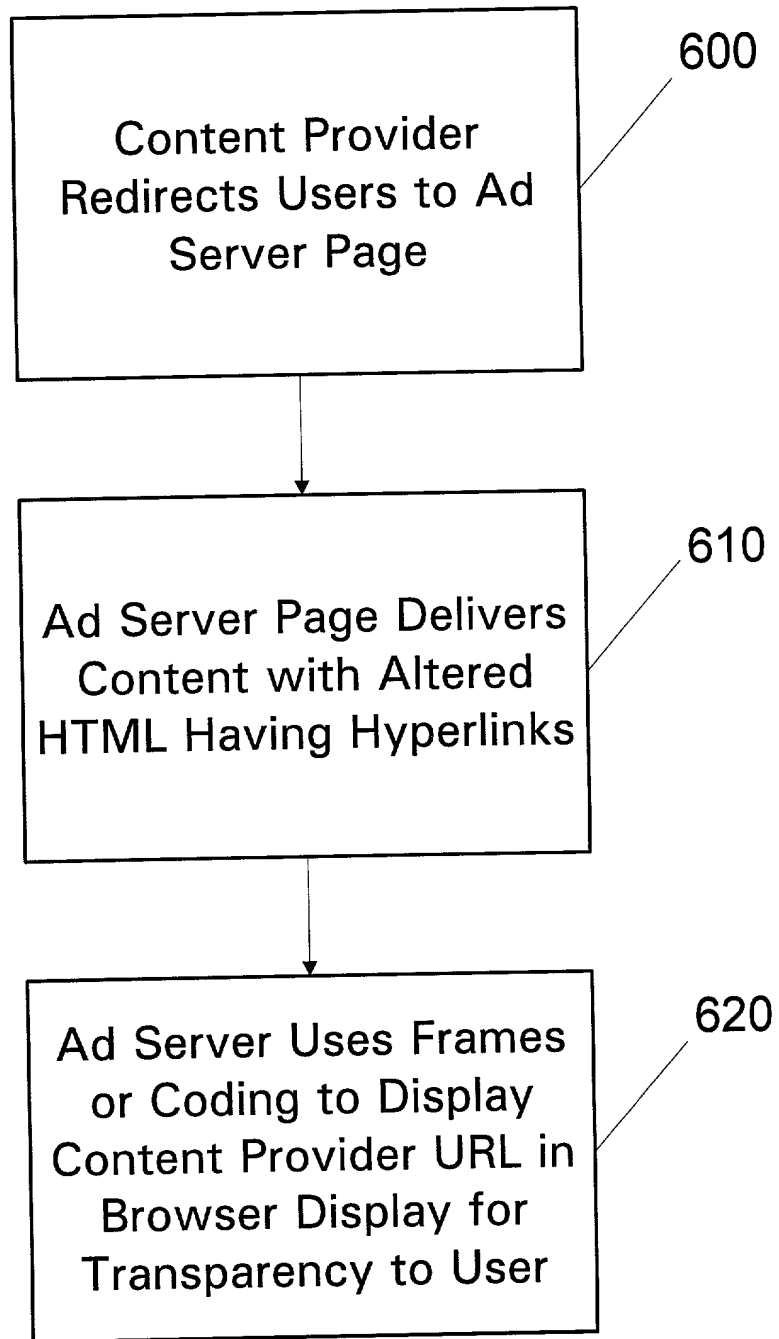


Fig. 6

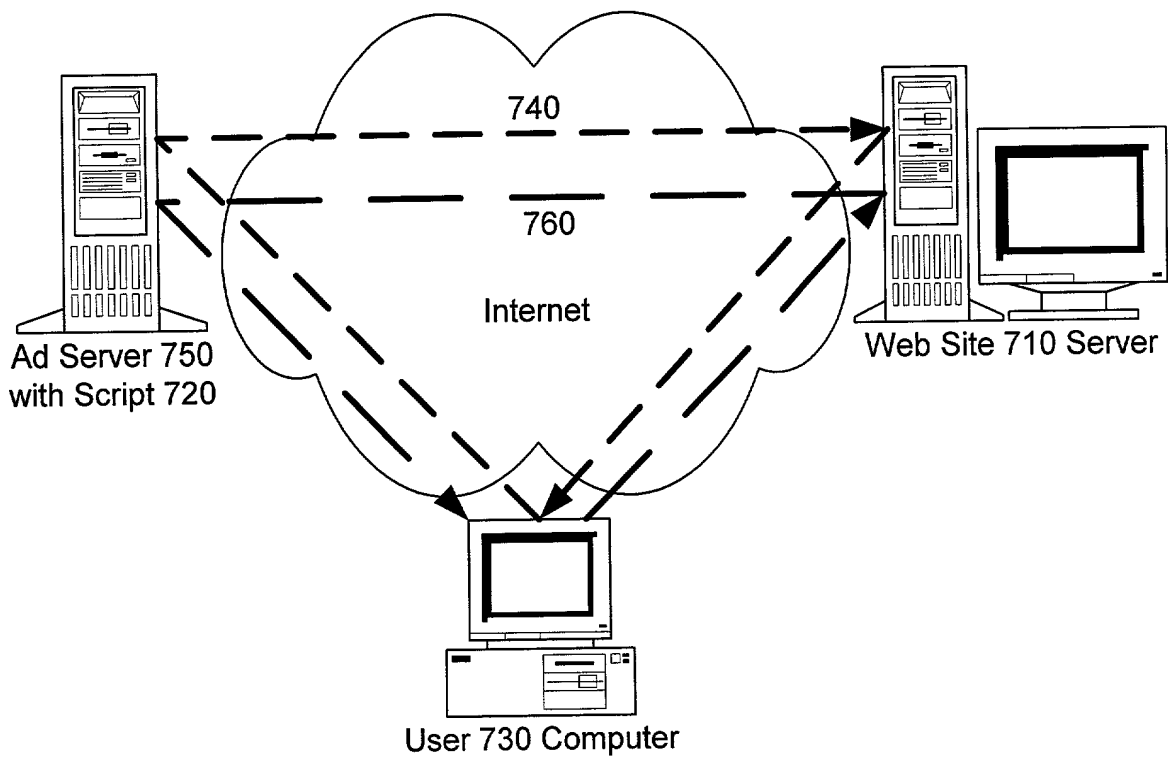


FIG. 7A

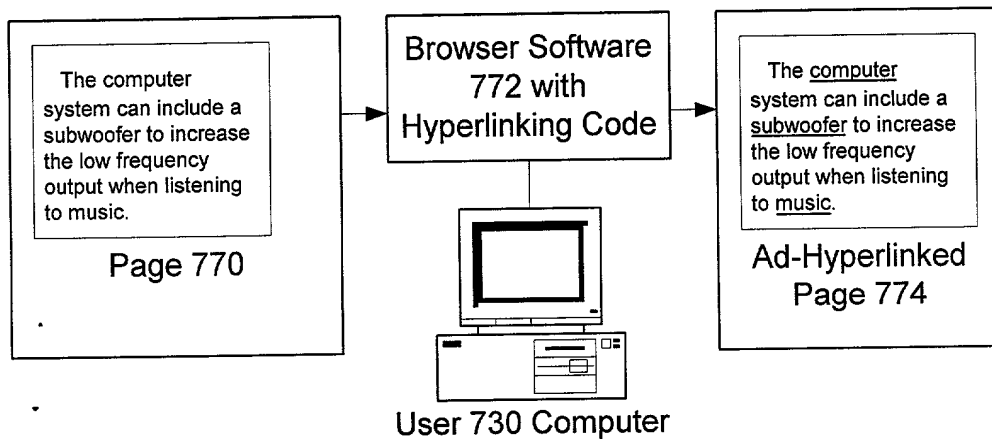


FIG. 7B